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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER	
SHOSHO, C	
ART UNIT	PAPER NUMBER
1714	8

DATE MAILED: 05/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/501,408	Serre
Examiner	**Art Unit**
Callie Shosho	1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Feb 28, 2001

2a) ☒ This action is **FINAL.** 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-13 is/are pending in the applica

4a) Of the above, claim(s) _____ is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-13 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

1. All outstanding rejections except for those described below are overcome by applicant's amendment filed 2/28/01.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-3, 5, and 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsuo (U.S. 5,929,157).

The rejection is adequately set forth in paragraph 5 of the office action mailed 8/28/00, Paper No. 6, and is incorporated here by reference.

4. Claims 1-3 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 799854.

The rejection is adequately set forth in paragraph 6 of the office action mailed 8/28/00, Paper No. 6, and is incorporated here by reference.

5. Claims 1-3 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 738614.

The rejection is adequately set forth in paragraph 7 of the office action mailed 8/28/00, Paper No. 6, and is incorporated here by reference.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 4, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo (U.S. 5,929,157) in view of Takeichi et al. (U.S. 6,008,295).

The rejection is adequately set forth in paragraph 9 of the office action mailed 8/28/00, Paper No. 6, and is incorporated here by reference.

8. Claims 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuo (U.S. 5,929,157) in view of Fukahori et al. (U.S. 5,844,050).

The disclosure with respect to Matsuo in paragraph 3 above is incorporated here by reference.

The difference between Matsuo and the present claimed invention is the requirement in the claims of diene elastomer which has been modified by branching agent such as divinylbenzene as well as a functionalized diene elastomer.

Fukahori et al., which is drawn to rubber composition, disclose a diene elastomer comprising a majority of cis-1,4-bonds which is branched using divinylbenzene and/or functionalized by terminating with amine groups (col.8, lines 15-19 and 25, col.8, line 60-col.9, line 14, col.9, lines 32 and 46-50, and col.11, lines 38-45) in order to produce a composition with good abrasion resistance, fatigue resistance, and tensile properties (col.25, lines 26-36).

In light of the motivation for using specific type of diene elastomer disclosed by Fukahori et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such elastomer in the elastomeric filler mix composition of Matsuo in order to produce a mix with good abrasion resistance, fatigue resistance, and tensile properties, and thereby arrive at the claimed invention.

9. Claims 1-5, 7-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (U.S. 5,902,856).

The rejection is adequately set forth in paragraph 10 of the office action mailed 8/28/00, Paper No. 6, and is incorporated here by reference.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. as applied to claims 1-5, 7-10, and 12 above, and further in view of Fukahori et al. (U.S. 5,844,050).

The difference between Suzuki et al. and the present claimed invention is the requirement in the claims of diene elastomer which has been modified by branching agent such as divinylbenzene.

Fukahori et al., which is drawn to rubber composition, disclose a diene elastomer comprising a majority of cis-1,4-bonds which is branched using divinylbenzene (col.9, lines 4-14, 32 and 46-50) in order to produce a composition with good abrasion resistance, fatigue resistance, and tensile properties (col.25, lines 26-36). Fukahori et al. also disclose the equivalence and interchangeability of starring agents such as silicon or tin halides as disclosed by Suzuki et al. with branching agents such as divinylbenzene (col.9, lines 20-32).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use divinylbenzene branching agent in the elastomeric filler mix of Suzuki et al. in order to produce a branched elastomer and thus, a mix with good abrasion resistance, fatigue resistance, and tensile properties, and thereby arrive at the claimed invention.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. as applied to claims 1-5, 7-10, and 12 above, and further in view of either Fukahori et al. (U.S. 5,844,050) or Nakamura et al. (U.S. 6,075,092).

The difference between Suzuki et al. and the present claimed invention is the requirement in the claims of functionalized diene elastomer.

Fukahori et al., which is drawn to rubber composition, disclose a diene elastomer comprising which is functionalized by terminating the elastomer with amine groups (col.8, lines 15-19 and 25, col.8, line 60-col.9, line 14, col.9, lines 32 and 46-50, and col.11, lines 38-45) in order to produce a composition with good abrasion resistance, fatigue resistance, and tensile properties (col.25, lines 26-36).

Alternatively, Nakamura et al., which is drawn to rubber composition, disclose modifying diene elastomer with carboxyl, carbonyl, or amine group (col.3, lines 45 and 47) in order to produce composition with balanced tensile strength, heat build-up, and processability (col.28, lines 56-60).

In light of the disclosure of either Fukahori et al. or Nakamura et al., it therefore would have been obvious to one of ordinary skill in the art to functionalize the diene elastomer in the elastomeric filler mix of Suzuki et al. in order to produce a mix with good abrasion resistance, fatigue resistance, and tensile properties, or alternatively, balanced tensile strength, heat build-up, and processability, and thereby arrive at the claimed invention.

12. Claims 1-2, 5, 7, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagishi et al. (U.S. 6,013,737).

The rejection is adequately set forth in paragraph 11 of the office action mailed 8/28/00, Paper No. 6, and is incorporated here by reference.

Response to arguments

13. Applicants' arguments with respect to Sandstrom et al. (U.S. 6,046,266) have been considered and are moot in view of the discontinuation of this reference as applied against the present claims.

14. Applicant's arguments filed 2/28/01 have been fully considered but, with the exception of arguments relating to the Sandstrom et al. reference, they are not persuasive.

Specifically, the applicant argues that:

(a) Matsuo does not disclose that the natural rubber comprises a majority of cis-1,4 bonds, that the silica is modified with SiOH, or that the natural rubber is present in an amount of greater than 70 phr as presently claimed.

(b) EP 799854 do not disclose that the natural rubber comprises a majority of cis-1,4 bonds, that the carbon black is modified with SiOH, that the natural rubber is present in an amount of greater than 70 phr, or the amount of filler as presently claimed.

(c) EP 738614 do not disclose that the natural rubber comprises a majority of cis-1,4 bonds or that the silica is modified with SiOH.

(d) Takeichi et al. do not disclose filler as presently claimed.

(e) Neither Suzuki et al. or Takagishi et al. disclose filler as presently claimed.

(f) Neither Suzuki et al. or Takagishi et al. recognize that the ratio of white filler to carbon black as a result-effect variable.

With respect to argument (a), while Matsuo does not explicitly disclose that the natural rubber comprises a majority of cis-1,4 bonds, it does disclose the use of natural rubber which is well known, as found in state-of-the-art references such as *Polymer Science Dictionary* (page 331) to inherently possess a majority of cis-1,4 bonds, typically 95% cis-1,4-bonds. As further evidence to support this position, attention is drawn to *Hawley's Condensed Chemical Dictionary* (page 900) which discloses that natural rubber is cis-1,4-polyisoprene, and thus, contains a majority of cis-1,4 bonds.

Additionally, col. 9, lines 66-67 and col.10, lines 38-52 of Matsuo disclose that the silica utilized by Matsuo are in fact modified with SiOH. Further, silica known under the tradename Ultrasil VN3 is utilized by Matsuo which is identical to the silica utilized in the present invention.

Also, col.4, lines 46-47 of Matsuo disclose that the composition contains not less than 30 phr natural rubber, preferably 30-80 parts natural rubber, which clearly overlaps the amount presently claimed.

With respect to argument (b), EP 799854 disclose natural rubber, which as discussed with respect to argument (a) above, inherently possesses a majority of cis-1,4 bonds as presently claimed.

Further, while the examples of EP 799854 disclose using natural rubber in an amount outside the scope of the present claims, "applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others." In re Courtright, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967). Further, "nonpreferred disclosures can be used. A nonpreferred portion of a reference disclosure is just as significant as the preferred portion in assessing the patentability of claims." In re Nehrenberg, 280 F.2d 161, 126 USPQ 383 (CCPA 1960). It is noted that page 4, lines 21-30 and 51 of EP 799854 disclose that the composition comprises 100 parts rubber wherein the rubber comprises natural rubber and that the composition comprises mixtures of rubber or a single type of rubber. Thus, the composition comprises up to 100 parts natural rubber which clearly overlaps the amount presently claimed.

Additionally, page 6, lines 9-19 of EP 799854 disclose that the carbon black is modified by adding acid to an aqueous suspension of carbon black in sodium silicate which would produce a carbon black with SiOH on its surface.

Finally, with respect to the amount of filler, it is noted that the present claims require 15-40 phr white filler such as modified carbon black or mixture of white filler and carbon black.

Given that EP 799854 disclose the use of 10-100 parts modified carbon black (col.4, lines 49-51), it is clear that the amount of carbon black overlaps the 15-40 phr presently claimed.

With respect to argument (c), EP 738614 disclose natural rubber, which as discussed with respect to argument (a) above, inherently possesses a majority of cis-1,4 bonds as presently claimed.

Further, EP 738614 disclose the use of silica known under the tradenames Zeopol 8745, Zeosil 1165MP, and VN3 which are identical to those utilized in the present invention and thus, inherently are modified with SiOH as presently claimed. As further evidence to support this position, state-of-the-art references such as Zimmer et al. (U.S. 6,136,919) disclose that Zeosil 1165 MP does in fact possess SiOH groups on its surface (col.7, lines 50-55).

With respect to argument (d), note that Takeichi et al. is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

With respect to argument (e), it is noted that Suzuki et al. disclose the use of Zeosil 1165MP which as discussed with respect to argument (c) above, intrinsically possesses SiOH groups on its surface while Takagishi et al. disclose the use of UVN3 which as discussed with respect to argument (a) above, intrinsically possesses SiOH groups on its surface.

With respect to argument (f), applicant argues that neither Suzuki et al. or Takagishi et al. recognize that the ratio of white filler to carbon black as a result-effect variable with respect to the effect of this ratio on cohesion and hysteresis.

However, with respect to Takagishi et al., it is noted that Takagishi et al. disclose the use of 30-80 phr silica and 5-50 phr carbon black which clearly encompasses the requirement in the claims that the amount of white filler is greater than or equal to the amount of carbon black minus 5. Thus, there is no need to optimize the amounts of filler within the bounds of routine experimentation given that the amounts disclosed by Takagishi et al. already overlap those presently claimed.

With respect to Suzuki et al., applicant argues that Suzuki et al. do not recognize that the ratio of white filler to carbon black effect cohesion and hysteresis. However, there is no requirement in the claims regarding the cohesion of hysteresis of the composition. Further, it is noted that example 5 discloses the use of 30 phr carbon black and 50 phr silica which meets the claimed requirement that the amount of white filler is greater than or equal to the amount of carbon black minus 5.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie Shosho whose telephone number is (703) 305-0208. The examiner can normally be reached on Monday-Thursday from 7:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599. Any inquiry of a

general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

CS.

Callie Shosho
5/8/01

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